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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,453	01/06/2004	Yohichiro Miyaguchi	246522US 2 CONT	2567
22850	7590	12/02/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			BRASE, SANDRA L	
1940 DUKE STREET			ART UNIT	
ALEXANDRIA, VA 22314			PAPER NUMBER	
			2852	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/751,453

Applicant(s)

MIYAGUCHI ET AL.

Examiner

Sandra L. Brase

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 is/are allowed.
- 6) ☒ Claim(s) 9-14, 20, 22, 25-31, 37, 39 and 42 is/are rejected.
- 7) ☒ Claim(s) 15-19, 21, 23, 24, 32-36, 38, 40 and 41 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 10/098125.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 9, 14, 26 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eklund et al. (US 6,175,707) in view of Hotomi et al. (US 5,027,157).
4. Eklund et al. (...707) disclose an image forming apparatus (figure 1) with a development device (figure 8) comprising: an electrostatic transportation device which moves fine particles by an electrostatic force (col. 8, lines 25-47), the electrostatic transportation device comprising, a transporting base plate (42) which has a plurality of electrodes (200) which generate an electric field which perform transporting and hopping of fine particles by an electrostatic force (col. 5,

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lines 25-47). A width of each of the electrodes in a traveling direction of the fine particles is set to be 75  $\mu\text{m}$  (col. 8, lines 55-58), and a pitch between the electrodes in the traveling direction of the fine particles is set to be 75  $\mu\text{m}$  (col. 8, lines 55-58). Driving waveforms of four phases are applied to respective electrodes (col. 7, line 64 – col. 8, line 4). A driving voltage applied to the electrodes and a voltage of a latent image section formed on a photosensitive body are set such that an electric field generated by the driving voltage and the voltage of the latent image section attracts the fine particles towards the photosensitive body, and the driving voltage and a voltage of a non-latent image section formed on the photosensitive body are set such that an electric field generated by the driving voltage and the voltage of the non-latent image section repels the fine particles from the photosensitive body (col. 5, lines 9-25). A base member serving as the transporting base plate is formed from a flexible deformable material (col. 5, lines 25-27). However, Eklund et al. (...707) do not disclose the average particle diameter of the fine particles. Hotomi et al. (...157) disclose an image forming apparatus with a developing device including fine particles of toner with an average particle diameter of 13  $\mu\text{m}$  (col. 15, lines 18-31; and col. 16, lines 16-28). It would have been obvious to one of ordinary skill in the art at the time of the invention for the fine particles to have the diameter as disclosed by Hotomi et al. (...157), since such a diameter of particles is well known in the art to be used to develop a latent image.

5. Claims 10, 25, 27 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eklund et al. (US 6,175,707) in view of Hotomi et al. (US 5,027,157) as applied to claims 9 and 26 above, and further in view of Badesha et al. (US 5,848,327).

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6. Eklund et al. (...707) in view of Hotomi et al. (...157) disclose the features mentioned previously. Eklund et al. (...707) also disclose a protective layer covering the electrodes (col. 8, lines 57-59). However, Eklund et al. (...707) in view of Hotomi et al. (...157) do not disclose the thickness of the protective layer and the driving frequency of each phase. Badesha et al. (...327) disclose a protective layer on electrodes in a developing device having a thickness preferably 2-10  $\mu\text{m}$  (col. 11, line 18 – col. 12, line 5). The driving waveform applied to the electrodes in the developing device has a frequency of 9-15 kHz (col. 6, lines 13-23). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the protection layer have the claimed thickness, as disclosed by Badesha et al. (...327) so as to provide superior wear resistance, and it would have also been obvious to have the driving waveform have a frequency in the claimed range, as disclosed by Badesha et al. (...327), since such a frequency for development driving waveform is well known in the art for transporting fine particles for development.

7. Claims 10-13 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eklund et al. (US 6,175,707) in view of Hotomi et al. (US 5,027,157) as applied to claims 9 and 26 above, and further in view of Parker (US 5,729,807) and Badesha et al. (US 5,848,327).

8. Eklund et al. (...707) disclose the features mentioned previously, but do not disclose the method of forming the electrodes, the method of forming the protective layer, and the thickness of the electrodes. Parker (...807) discloses forming electrodes in a development device by etching (col. 6, lines 2-10), where the electrodes are one micron thick (col. 4, lines 63-64). It

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would have been obvious to one of ordinary skill in the art at the time of the invention to have the electrodes formed by etching, as disclosed by Parker (...807), since this is a well known method for forming electrodes for use in a development system, and it would have also been obvious to have the electrodes have a thickness in the claimed range, as disclosed by Parker (...807), since electrodes having such a thickness are well known in the art to be used in a development device. Badesha et al. (...327) disclose forming a protective layer on electrodes by deposition methods which includes liquid and powder coating, dip and spray coating, and ion beam assisted and RF plasma deposition (col. 11, lines 47-51). It would have been obvious to one of ordinary skill in the art at the time of the invention to form the protective layer by the claimed method, as disclosed by Badesha et al. (...327), since such a method of forming a protective layer on an electrode of a developing device is well known in the art.

9. Claims 20 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eklund et al. (US 6,175,707) in view of Hotomi et al. (US 5,027,157) as applied to claims 9 and 26 above, and further in view of Lestrangle (US 6,219,515).

10. Eklund et al. (...707) in view of Hotomi et al. (...157) disclose the features mentioned previously, but do not disclose a unit that vibrates the transporting base plate. Lestrangle (...515) discloses an electrostatic transportation device including electrodes and a transporting base plate, where a unit vibrates the transporting base plate (col. 5, line 63 – col. 6, line 26). It would have been obvious to one of ordinary skill in the art at the time of the invention to have a unit that vibrates the transporting base plate, as disclosed by Lestrangle (...515) so as to decrease the intimate contact of the particles while still sustaining motion of the particles.

11. Claims 22 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eklund et al. (US 6,175,707) in view of Hotomi et al. (US 5,027,157) as applied to claims 9 and 26 above, and further in view of Hosoya et al. (US 4,598,991).

12. Eklund et al. (...707) in view of Hotomi et al. (...157) disclose the features mentioned previously, but do not disclose the claimed charge potential of the latent image carrier. Hosoya et al. (...991) disclose an image forming apparatus including an image carrier that is charged to 300V (col. 2, lines 57-59). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the latent image carrier be charged to 300V, as disclosed by Hosoya et al. (...991), since it is well known in the art for a latent image carrier to be charged to such a value for image formation.

***Allowable Subject Matter***

13. Claims 15-19, 21, 23, 24, 32-36, 38, 40 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claims 1-8 are allowed.

***Response to Arguments***

15. Applicant's arguments filed 9/9/04 have been fully considered but they are not persuasive.

Applicant argues that Eklund et al. (US 6,175,707) in combination with Hotomi et al. (US 5,027,157) do not disclose the features of claims 9 and 26; however, this is incorrect as explained above. Specifically, Eklund et al. (...707) disclose the width (75  $\mu\text{m}$ ) and pitch (75 $\mu\text{m}$ ) of the electrodes in a transporting base plate that performs transporting and hopping of developer particles, but does not disclose the size of the developer particles, where Hotomi et al. (...157) disclose a well known size (13 $\mu\text{m}$ ) in the art of developer particles used in a developing device that uses transporting electrodes. Hence, the width and pitch of the electrodes of Eklund et al. (...707) are well within the claimed range using developing particles that are the size of particles that are well known to be used as disclosed by Hotomi et al. (...157). Furthermore, the width and pitch of electrodes disclosed in Eklund et al. (...707) would lie in the claimed range with the use of developer particles having a particle diameter in the range of 3.75-75 $\mu\text{m}$ , and the well known size of a particle diameter 13 $\mu\text{m}$  disclosed by Hotomi et al. (...157) is within this range.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170



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USPQ 209 (CCPA 1971). In this case, the particle size as disclosed by Hotomi et al. (...157) is well known in the art for use in a developing device having electrodes.

***Final Rejection***

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra L. Brase whose telephone number is 571-272-2131. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur T. Grimley, can be reached on 571-272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sandra L. Brase  
Primary Examiner  
Art Unit 2852

November 29, 2004